# RepairInsights

FOR INDEPENDENT BODY SHOPS

Genuine GM | Parts

JAN–MAR 2014

## Cadillac CTS – 2014 Motor Trend Car of the Year

*ALSO IN THIS ISSUE*


- More Stories, Pictures and Resources at GMRepairInsights.com
  - Genuine GM Rewards
  - Chevrolet Performance at SEMA
- Door Hinge Assemblies Introduced
- Prices Dropped on OE Aluminum and Steel Wheels
- I-CAR Expands GM Collision Repair Training

MOTOR TREND CAR OF THE YEAR 2014 CADILLAC CTS

### Aluminum Structures Contribute to Light Weight Power-Dense Powertrains Underpin Its Performance

**More Inside:** 2014 CTS Repair Procedures

Genuine GM Parts Resources Online

# Contents

## GM RepairInsights Online

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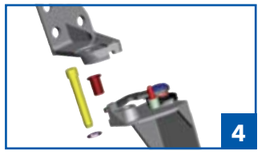
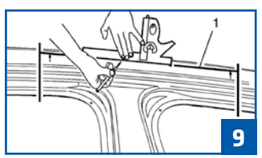



**4 / G-Van Hinge Kits**
With new hinge pin and bushing kits for rear cargo door hinges, GM has full-size vans covered front, side and rear.

**6 / GM OEM Wheels More Competitive**
Prices on over 500 GM OEM wheels have been lowered an average of 31 percent.

**7 / 2014 Cadillac CTS Sedan**
Motor Trend's Car of the Year, The 2014 Cadillac CTS, full of High-tech marvels. Twin-Turbo V-6 packs a wallop.




**9 / Cadillac CTS Repair Procedures**
www.gmtechinfo.com offers access for service manuals and other repair resources. Follow this example of Center Pillar Sectioning – Outer for the 2014 Cadillac CTS.

**10 / GM Training with I-CAR Expands**
Two important GM study courses added to I-CAR's curriculum.



All the stories in this magazine, additional content and pictures are available at gmrepairinsights.com

GMREPAIRINSIGHTS.COM

## GM Rewards For Collision Parts Continues Rollout

Last fall, GM extended its popular Genuine GM Rewards program to select collision parts. Now, registered shops that purchase GM OE doors, mirrors, wheels and lighting assemblies through OEConnection's CollisionLink® can participate.

Qualifying purchases are eligible for reward points ranging from 1% to 3.5% of list price. (1 point is equivalent to $1). Points can be used to purchase a wide variety of goods and services available exclusively through a Genuine GM Rewards catalog that participants access through genuinegmrewards.com.

Points are earned with each eligible online purchase and post to a user's account around the third week of the following month.

**Read the rest of the story on Genuine GM Rewards for Collision Parts. Go to gmrepairinsights.com.**

## Chevrolet Performance in Full Stride at SEMA 2013

### Exciting new concepts exhibited along with commercial powertrain solutions.

Chevrolet Performance strutted its stuff at the annual Specialty Equipment Manufacturers Association (SEMA) show last November.

*Team Chevrolet race drivers Ron Fellows (left center), and Danica Patrick sign autographs in the Chevrolet Performance exhibit at the 2013 SEMA Show in Las Vegas, Nev.*

There's a lot new for Chevrolet Performance to crow about in 2014, and the big Las Vegas event was the launching pad. Chevrolet's power-packed SEMA booth showed the brand at its creative best. On display were new powertrain products and the most extensive lineup of new Chevrolet high-performance concept vehicles in two decades.

**For pictures of the 2013 SEMA and to read the rest of the story go to gmrepairinsights.com.**

## GM OE Parts Update

*Chevrolet Express*



*G Van Rear door Pin images, view of Pin, Bushing and Keeper*



*G Van rear door Pin kit 19301966 replaces wear items:*
- *Pin (greaseable)*
- *Bushing*

# G-Van Rear Door Repairs No Longer Hinge on New Doors, Hinge Assemblies

**General Motors now has the hinge pin and bushing service parts needed to fix every door on Chevrolet Express and GMC Savanna full-size vans.**

With the recent introduction of new hinge pin and bushing kits for rear cargo door hinges, GM has full-size vans covered front, side and rear. Kits have long been available for front doors and side cargo doors. New pin kit part number 19301966 contains all the components needed to restore design intent performance to worn hinges. Consisting of greasable pins, bushing and keepers, the kit makes quick work of door repair on GM full size vans. When ordering kits, note that one kit repairs two hinges-one door. For all but the most worn doors, the kits offer a better solution than complete hinge replacement.

"We realize that hinge replacement is not always an economical strategy, so now we're offering pin and bushing kits as an alternative method of restoring door function," says GM Customer Care & Aftersales' Bob Gollehur, product specialist, GM Collision Product Lines. "This is GM's lowest-cost solution for hard-to-close or misaligned rear doors."

When General Motors redesigned current model Express/Savana vans in 1996 it responded to the needs of fleet customers. Customers indicated they wanted rear doors that opened 180 degrees to improve loading. Collectively, GM delivered a product that has improved functionality; the rear doors open 180 degrees for customers who back up to a loading dock or platform. The van also features better styling and improved durability by hiding rear door hinges behind body panels rather than exposing them to the elements.

Hinge straps are welded to the door side in production, which adds cost and complexity to hinge replacement. Entire hinge replacement requires removal of the welded hinge straps on the door side of the design which takes time to drill out welds, install and position new hinges and involves applying refinishing materials.

**Note: GM Service Hinge Kits** include pre-drilled hinge straps and all fasteners necessary to install hinges and provide for adequate adjustment. Welded hinges lead to unique service strategies for door assembly service parts.

With the introduction of new hinge pin and bushing kits for rear cargo door hinges GM has made available the necessary parts to economically service worn hinges. GM now has more than a dozen pin and bushing kits to remedy hard to open /close doors by rebuilding hinges. Indeed, whatever the circumstances, GM has the reliable OE solution to service many popular GM models.

See the chart for part numbers and usage and contact you GM dealer for ordering information.

## General Motors Pin & Bushing Kits For Door Hinges

| Part Number | Kit Description | Remedy for: | Qty Req/ door | Years | Make/Model |
|---|---|---|---|---|---|
| 19260061 | PIN KIT FRONT & REAR SIDE DOOR Upper & Lower Greaseable | Door sags Hard to open/close | 1 | 2007-2014 | (New Style) Chevrolet Silverado, Suburban, Tahoe, GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL |
| | | | | | Cadillac Escalade ESV & EXT |
| | | | | 2007-2013 | Chevrolet Avalanche |
| 19260063 | PIN KIT FRONT SIDE DOOR CHECK PIN & ROLLER Lower Hinge Only-Greaseable | Door pops Will not stay open | 1 | 2007-2014 | (New Style) Chevrolet Silverado, Suburban, Tahoe GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL |
| | | | | | Cadillac Escalade ESV & EXT |
| | | | | 2007-2013 | Chevrolet Avalanche |
| 19260056 | PIN KIT FRT SIDE DOOR Greaseable | Door sags Hard to open/close | 2 | 2002-2009 | Chevrolet Trailblazer |
| | | | | 2002-2007 | GMC Envoy |
| | | | | 2004-2007 | Buick Rainier |
| | | | | 2005-2007 | Saab 9-7X |
| 19260058 | PIN KIT FRONT SIDE DOOR Greaseable w/Link (Passenger Side) | Door sags Hard to open/close | 2 | 1999-2007 | Chevrolet Silverado & GMC Sierra |
| | | | | 2000-2006 | Chevrolet Suburban, Tahoe GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL |
| | | | | 2002-2006 | Chevrolet Avalanche |
| | | | | 2000-2006 | Cadillac Escalade ESV & EXT |
| 19260060 | PIN KIT FRONT SIDE DOOR Greaseable w/Link (Drivers Side) | Door sags Hard to open/close | 2 | 1999-2007 | Chevrolet Silverado & GMC Sierra |
| | | | | 2000-2006 | Chevrolet Suburban, Tahoe GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL Cadillac Escalade ESV &EXT |
| | | | | 2002-2006 | Chevrolet Avalanche |
| 19299322 | PIN KIT FRONT SIDE DOOR Greaseable | Door sags Hard to open/close | 2 | 1999-2007 | Chevrolet Silverado & GMC Sierra |
| | | | | 2000-2006 | Chevrolet Suburban, Tahoe GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL |
| | | | | 2002-2006 | Chevrolet Avalanche |
| | | | | 2000-2006 | Cadillac Escalade ESV & EXT |
| 19299324 | PIN KIT FRONT SIDE DOOR | Door sags Hard to open/close | 2 | 1999-2007 | Chevrolet Silverado & GMC Sierra |
| | | | | 2000-2006 | Chevrolet Suburban, Tahoe GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL Cadillac Escalade ESV & EXT |
| | | | | 2002-2006 | Chevrolet Avalanche |
| 89025543 | PIN KIT REAR SIDE DOOR (Extended Cab) | Door sags Hard to open/close | 2 | 1999-2007 | Chevrolet Silverado GMC Sierra Extended Cab Models |
| 19299326 | PIN KIT FRONT SIDE DOOR | Door sags Hard to open/close | 2 | 2004-2012 | Chevrolet Colorado GMC Canyon |
| 15994345 | PIN KIT FRONT SIDE DOOR | Door sags Hard to open/close | 2 | 1996-2015 | Chevrolet Express GMC Savana |
| 19260663 | PIN KIT SIDE CARGO DOOR Greaseable | Hard to open/close Door binds | 1 | 1996-2015 | Chevrolet Express GMC Savana |
| 19301966 | PIN KIT REAR CARGO DOOR Greaseable | Hard to open/close Door binds | 1 | 1996-2015 | Chevrolet Express GMC Savana |

Genuine GM | Parts

# Don't Be Lured by Steals on Reconditioned Wheels

*Sticking With GM OE Wheels, Now Competitively Priced, Can be a Better Choice*

Prices on many OE aluminum and steel wheels from Genuine GM Parts have been drastically reduced.

As of October 2013, prices on over 500 wheels were lowered an average of 31 percent.

"Our goal was to bring prices more in line with reconditioned wheels available in the market," says Chad Ogden, collision product specialist with GM Customer Care & Aftersales (GM CCA).

By cutting prices GM is hoping to entice collision repairers to move away from the practice of using reconditioned wheels. While they may carry attractive prices, reconditioned wheels also come with some major drawbacks. Most notably, the reconditioning process can change a wheel's shape, size and structural integrity. That can potentially compromise both performance and safety.

## Wheels May Look the Same, but They Aren't the Same

"The process of reconditioning wheels damaged in an accident can produce what looks like a fully repaired, nicely polished wheel that looks like the original," Ogden says. "But look a little deeper and you might have a wheel that has been bent, welded or had metal grinded away or added. That can call into question the quality, durability and performance or the wheel.

The lack of clear standards for reconditioned wheels further complicates the problem. Reconditioning practices vary, and some may produce marginally safer wheels than others. But without any oversight, regulations or clear standards, repairers are left to wonder whether using reconditioned wheels is a safe practice. Most vehicle makers, including GM, either do not warrant the use of reconditioned wheels, or strongly caution against their use.

Wheels play an integral role in both the safety and performance of today's cars and trucks. Vehicle manufacturers have designed OE wheels to meet specific performance standards in safety, durability, alignment, ability to balance, and the management of road inputs. Changes made to wheel surfaces, structure, or dimensions during the reconditioning process may impact a wheel's performance to those standards. Collision repairs made with new OE wheels is the only surefire way to ensure all performance standards and specifications are met.

With the newly lowered and highly competitive prices on new Genuine GM wheels, repairers can now service their customers both confidently and affordably.

# 2014 CADILLAC CTS Sedan

*Lightweight Features, Including Aluminum Door Structures, Contribute to Lower Weight and a 50/50 Weight Balance.*

## Performance Driven by the All-New Cadillac Twin-Turbo V-6 Partnered with Eight-Speed Automatic

Cadillac's all-new 2014 CTS sedan ascends into the heart of the midsize luxury market with expanded performance, elevated luxury and sophisticated technology. It will be the segment's lightest car. A range of power-dense powertrains underpin its performance, including the all-new Cadillac Twin-Turbo engine and eight-speed automatic transmission.

*The 2014 Cadillac CTS sedan is the Motor Trend Car of the Year for 2014. The third-generation CTS sedan is based on the high-performing rear-drive architecture of the award-winning ATS sport sedan, moving Cadillac into the prestigious class of midsize luxury sedans.*

While stretched in overall length and wheelbase, the all-new CTS sedan has a lower curb weight than the preceding model and weighs about 200 pounds (90 kg) less than the BMW 528i.

Lightweight features, including Cadillac's first aluminum door structures, contribute to the lower weight and a 50/50 weight balance.

A number of aluminum components are used with the suspension system, while the rear suspension is mostly steel. That helps offset the weight of the engine and transmission at the front of the vehicle, helping the CTS deliver its near-perfect weight balance and reducing noise and vibration.

The comparatively low curb weight helps make the most of the driving experience by allowing the use of lighter-weight chassis components, which reduces unsprung weight to enable more precise handling without compromising ride quality.

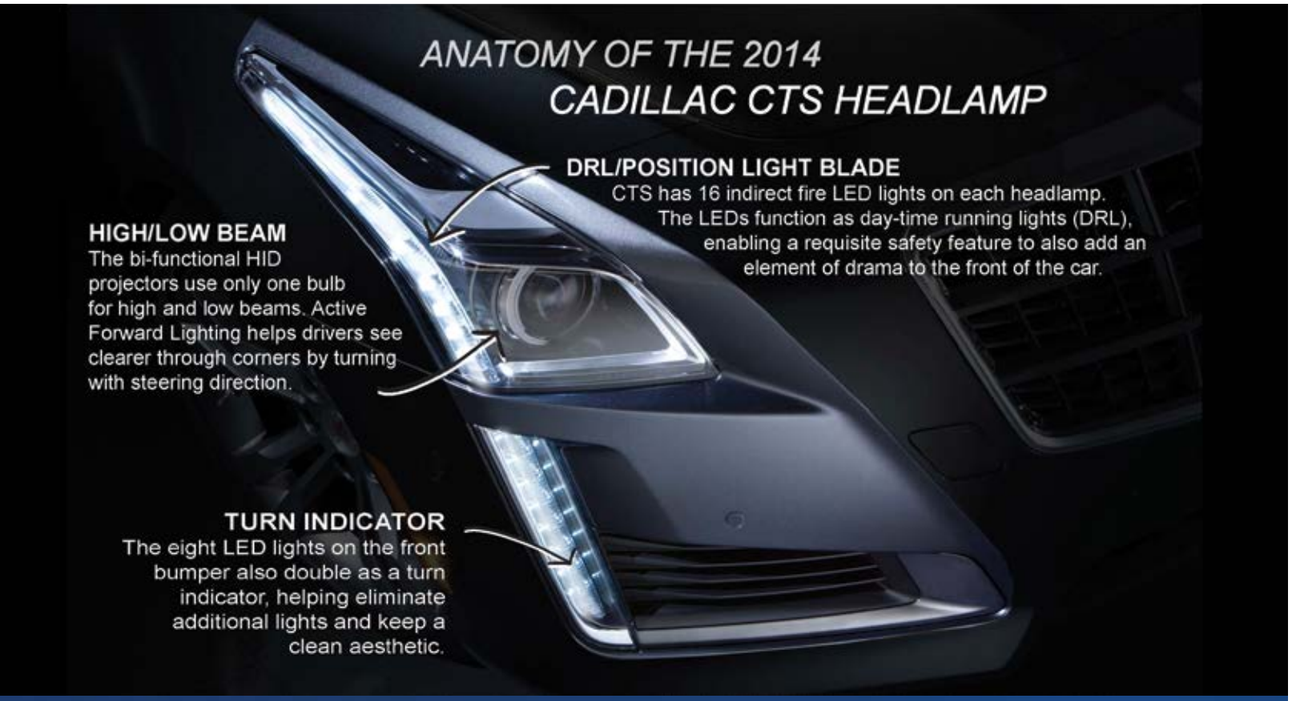
Suspension and driver control highlights include multi-link MacPherson strut front suspension

Ultrasonic sensors, as well as radar and cameras, support the CTS's advanced safety features to help prevent crashes. Among the most sophisticated is Front and Rear Automatic Braking , which relies on short-range radar technology and ultrasonic sensors.

Cadillac's shield grille and signature vertical lighting elements – including LED front signature lighting detail – evolve on the CTS.

Active grille shutters are included on some models, improving aerodynamic performance on the highway to enhance fuel efficiency.

## GM OE Parts Update (cont'd.)


ANATOMY OF THE 2014
CADILLAC CTS HEADLAMP
DRL/POSITION LIGHT BLADE
CTS has 16 indirect fire LED lights on each headlamp. The LEDs function as day-time running lights (DRL), enabling a requisite safety feature to also add an element of drama to the front of the car.
HIGH/LOW BEAM
The bi-functional HID projectors use only one bulb for high and low beams. Active Forward Lighting helps drivers see clearer through corners by turning with steering direction.
TURN INDICATOR
The eight LED lights on the front bumper also double as a turn indicator, helping eliminate additional lights and keep a clean aesthetic.

The Cadillac Twin-Turbo is SAE-certified at 420 horsepower (313 kW) and 430 lb.-ft. of torque (583 Nm), making it the most power-dense six-cylinder engine in the segment. A pair of smaller turbochargers helps provide more immediate power on demand. That gives the engine a broad torque curve and helps the CTS Vsport reach 60 mph in an estimated 4.6 seconds.

The 2014 CTS is also available with a naturally aspirated 3.6L V-6 rated at an estimated 321 horsepower and also matched with the new paddle-shift eight-speed automatic in rear-wheel-drive models (or six-speed automatic with all-wheel drive; and a 2.0L turbocharged engine rated at an estimated 272 horsepower and paired with a six-speed automatic.

Cadillac's new, paddle-shift eight-speed offers efficiency and performance advantages over a six-speed transmission, including 1.5-percent greater fuel economy.

Go to **www.gmrepairinsights.com** for additional information on Cadillac 2014 CTS technology and safety features.



## Collision Repair Procedure Example, 2014 Cadillac CTS Sedan Center Pillar Sectioning – Outer

Even though the 2014 Cadillac CTS is a new vehicle, service and repair information resources are a click away at **www.gmtechinfo.com –** *Electronic Service Information.*

Technicians and shop owners can log on to the site to gain access to subscription services for service procedures and repair manuals. A complete Service Manual is accessible 24/7 through a subscription to the site. Free collision repair procedures will soon be available for the vehicles by going to **www.genuinegmparts.com.**

**2014 Cadillac CTS Sedan (VIN A) | CTS Sedan Service Manual 6103955 | Body Repair | Collision Repair | Repair Instructions | Document ID: 2885295**

## Center Pillar Sectioning – Outer

### Removal Procedure

***Warning:*** *Refer to Approved Equipment for Collision Repair Warning.*

***Warning:*** *Refer to Foam Sound Deadeners Warning.*

***Warning:*** *Refer to Battery Disconnect Warning.*

***Note:*** *This procedure was developed to allow access for the complete replacement of the center pillar outer panel reinforcement without removing the roof panel. There are sectioning procedures available for various locations of the body side outer panel. There are sectioning procedures available for various locations of the body side outer panel. The sectioning procedure and location should be chosen based on the extent of the damage to the vehicle and other inner reinforcements that need to be replaced. Sectioning should be performed only in the recommended areas. Failure to do so may compromise the structural integrity of the vehicle. Refer to other service procedures for additional sectioning locations.*

**1** Disable the SIR system. *Refer to SIR Disabling and Enabling.*

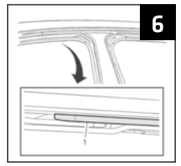
**2** Disconnect the negative battery cable. *Refer to Battery Negative Cable Disconnection and Connection.*

**3** Remove all related panels and components.

**4** Repair as much of the damaged area as possible. *Refer to Dimensions – Body.*

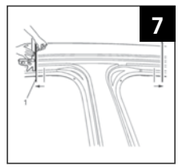
**5** Remove the sealers and anti-corrosion materials from the repair area, as necessary. *Refer to Anti-Corrosion Treatment and Repair.*

**6** Remove the weather-strip and measure rearward from the front edge of the roof panel 430 mm and mark a vertical line on the bodyside (1).

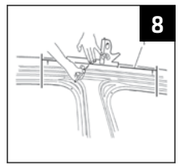



**7** Measure rearward from the front edge of the roof panel 800 mm and mark a second vertical line on the bodyside (1).

***Note:*** *Record the number and location of the original welds for installation of the service assembly.*

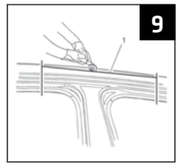



**8** Measure down 25 mm (1in) from the upper edge of the body side outer panel and mark a horizontal line (1). This is the cut line.



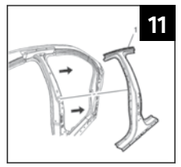

***Note:*** *Do not damage or cut the upper roof pillar reinforcements. The upper roof pillar reinforcement is made of Ultra High Strength Steel. Sectioning or repair of Ultra High Strength Steel is not recommended. Refer to Dimensions – Body.*

**9** Cut access window (1) in the center pillar outer.




**10** Perform additional sectioning procedures as needed depending on damage to vehicle. *Refer to Quarter Outer Panel Sectioning, Rocker Outer Panel Sectioning, or Front Hinge Pillar Body Sectioning.*

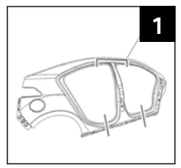
**11** Remove the damaged center pillar outer panel section (1).



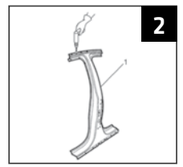

### Installation Procedure

**1** From the service part, cut the panel in corresponding locations to overlap the remaining original panel by 25 mm (1 in) at each joint location (1).

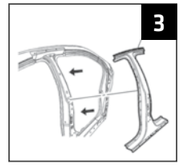
Prepare all mating surfaces for welding, as necessary (1).



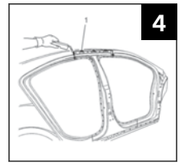

**2** Apply GM approved Weld -Thru Coating or equivalent to all mating surfaces. *Refer to Anti-Corrosion Treatment and Repair.*




**3** Position the outer center pillar (1) to the vehicle using 3-dimensional measuring equipment. Clamp the pillar in place.




**4** Weld the perimeter of the part at the original spot weld locations. To create a solid weld with minimum heat distortion, make stitch welds along the 25 mm overlap joints with equal gaps between the welds. Then go back and complete the welds to create a solid weld joint (1).




**5** Clean and prepare all of the welded surfaces.

**6** Apply the sealers and anti-corrosion materials to the repair area, as necessary. *Refer to Anti-Corrosion Treatment and Repair.*

**7** Paint the repaired area. *Refer to Basecoat/Clearcoat Paint Systems.*

**8** Install all of the related panels and components.

**9** Connect the negative battery cable. *Refer to Battery Negative Cable Disconnection and Connection.*

**10** Enable the SIR system. *Refer to SIR Disabling and Enabling.*

This example of **Center Pillar Sectioning – Outer** – 2014 Cadillac CTS Sedan, is just one of many found in their Service Repair Manuals. By following the proper repair procedures, technicians can ensure that each vehicle maintains its solid performance and uncompromised safety features for the life of the vehicle.

# New I-CAR Courses Cover Comprehensive Damage Assessment

## DAM10 and DAM12 are now part of the GM Technician Curriculum

**General Motors' collision repair training partner I-CAR (Inter-Industry Conference on Auto Collision Repair) is refining its curriculum to reflect new and better approaches to instruction.**

In the last year, I-CAR introduced two new courses. Exterior Panels Damage Analysis (DAM10) and Steel Structures Damage Analysis (DAM12) are designed to deliver training on more comprehensive damage assessment and repair tactics.

Both courses are now part of the official GM repair technician training curriculum offered since 2004 through I-CAR. Technicians with GM dealer body shops and independent body shops that have subletting arrangements with dealers must complete the I-CAR-GM training regimen.

*As with many other I-CAR courses, DAM10 and DAM12 are offered in both live classroom and online versions. Both are four hours in duration.*

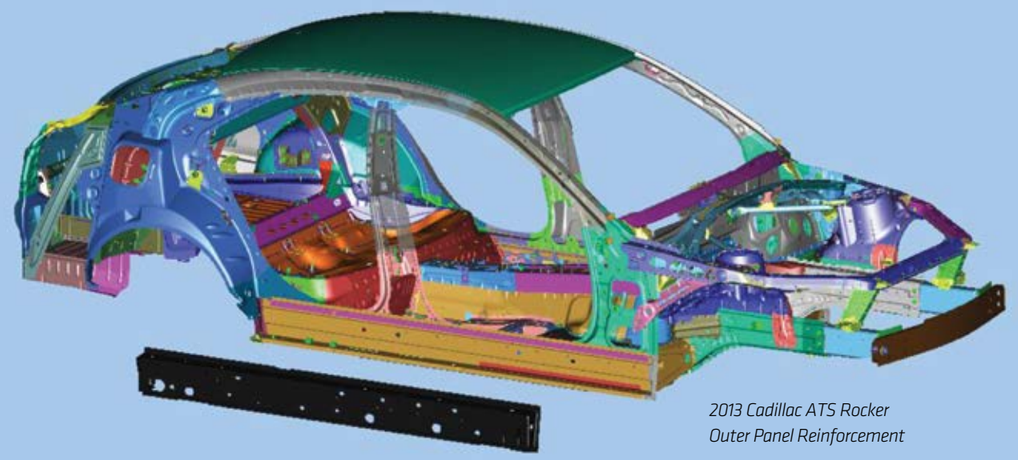
DAM10 replaces Frontal Damage Analysis (DAM02), and DAM12 replaces Restraints, Interior, Glass and Rear Impact Analysis (DAM04), which have been phased out. Rather than approaching damage assessment on the basis of location, the new courses key on damage severity.

"The two new courses are more in line with the needs of the structural collision tech, designed to help them better analyze damage that can't be seen just on simple visual inspection," says Mark Rehak, GM/I-CAR liaison. "It's important to be able to see all of the hidden damage that if left unfixed could compromise vehicle integrity and safety."

DAM10 has three main components. Damage Analysis Considerations reviews steel types and characteristics, frontal inspection techniques and damage analysis and repair plan procedures. Side Body Inspection covers side and outer panel damage assessment, including movable door and quarter glass and sunroofs. Rear Body and Aftermarket Parts Inspection focuses on vehicle rear damage encompassing bumper assemblies, lighting systems, pickup truck boxes and aftermarket parts considerations.

DAM12 explores how various vehicle structural designs respond in a collision and how that impacts damage assessment and repair considerations. Vehicle structures, their characteristics and how to use visual and measurement techniques are covered in the first module of the course. In the Structural Damage Analysis module students learn criteria for repair or replacement; the multiple roles of stationary glass in structural integrity; and analysis of full-frame structures.

**For more information on the new courses and the complete I-CAR curriculum requirements for GM, visit the I-CAR website, www.i-car.com, and look for "GM" under the "OEM Training" tab.**



*2013 Cadillac ATS Rocker Outer Panel Reinforcement*

I-CAR®
INTER-INDUSTRY CONFERENCE ON AUTO COLLISION REPAIR

Genuine GM | Parts

# Unlimited Rewards

**GM is proud to announce the addition of Collision parts to the Genuine GM Rewards program! Earn rewards on Lighting Assemblies, Doors, Mirrors and Wheels.**

**Introducing Genuine GM Rewards Program**
A new loyalty program from GM allows you to earn points on qualifying Genuine GM Collision Parts purchases.

- ✔ Exclusive to CollisionLink® customers
- ✔ Look for an email from CollisionLink® to complete your enrollment
- ✔ EASY! Buy parts and earn rewards – no paperwork, no claims to file
- ✔ Manage your rewards at genuinegmrewards.com

Not a CollisionLink® registered user? Call OE Connection at 888-776-5792 to get started or go to oeconnection.com

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